

Application No. 10/063,972

Amendments to the Claims:

Listing of Claims:

1. (Currently Amended) A flexible belt seam treatment apparatus comprising:
a support element with a smooth, abhesive surface that includes a fluoropolymer, the fluoropolymer arranged to support a belt seam region;
a treatment strip;
a heat source comprising an infrared radiation source in optical communication with optics that form a heat spot across at least a portion of a the treatment strip and at least a portion of a belt seam region on which the treatment strip is placed; and
a pressure applicator arranged to force at least the portion of the treatment strip against the portion of the belt seam region.
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)
7. (Currently Amended) The apparatus of claim 30 [[4]] wherein an outer surface of the pressure wheel comprises an abhesive coating.
8. (Original) The apparatus of claim 1 wherein the pressure applicator exerts about 1 lb/in to about 20 lb/in line contact force.

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9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Currently Amended) A belt seam treatment apparatus comprising:
a tube with a smooth, abhesive outer surface;
a belt hold system arranged to hold a seam region of a belt against at least a portion
of the outer surface of the tube,

wherein the belt hold system includes a bar that extends through a portion of the belt
farthest from the tube and selectively pulls the belt against the tube;

a treatment strip applied to the seam region of the belt;

an infrared radiation source lamp in optical communication with the at least a portion
of the outer surface of the tube against which the seam region of the belt is held;

optics that reflect and focus the infrared radiation from the infrared lamp onto at least
a portion of the seam region of the belt after a treatment strip has been applied,

wherein the lamp extends across substantially the entire seam region and the optics
form a heat line across the entire seam region; and

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a pressure wheel with a substantially concave outer surface substantially corresponding to a curvature of the at least a portion of the outer surface of the tube against which the seam region of the belt is held.

17. (Currently Amended) The apparatus of claim 31 16 wherein the infrared radiation source is an infrared laser.

18. (Previously Presented) The apparatus of claim 17 further comprising optics that alter a polarization of infrared radiation from the infrared laser and form a heat spot on a portion of the seam region of the belt after the treatment strip has been applied.

19. (Original) The apparatus of claim 18 further comprising an actuator that adjusts the optics so that the heat spot traverses a width of the seam region.

20. (Original) The apparatus of claim 19 further comprising another actuator that moves the pressure wheel with the heat spot to compress a portion of the strip and the seam region that the heat spot has heated.

21. (Canceled)

22. (Canceled)

23. (Currently Amended) The apparatus of claim 16 22 wherein the optics form a heat spot on a portion of the strip and the seam region and further comprising an actuator that adjusts the optics so that the heat spot traverses a width of the seam region.

24. (Original) The apparatus of claim 23 further comprising another actuator that moves the pressure wheel with the heat spot to compress a portion of the strip and the seam region that the heat spot has heated.

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25. (Canceled)

26. (Original) The apparatus of claim 16 wherein the belt hold system comprises a vacuum system including at least one opening in the outer surface of the tube, a sealed end of the tube, and an unsealed end of the tube in selective fluid communication with a vacuum source.

27. (Canceled)

28. (Currently Amended) The apparatus of claim 31 27 wherein the bar is connected to an actuator that selectively exerts force on the belt to pull the belt against the tube.

29. (Currently Amended) The apparatus of claim 31 27 wherein the bar is placed in the belt by an operator and pulls the belt through the action of gravity on the bar.

30. (NEW) A flexible belt seam treatment apparatus comprising:

a substantially planar support element with a smooth surface arranged to support a belt seam region;

a heat source comprising an infrared radiation source in optical communication with optics that form a heat spot across at least a portion of a treatment strip and at least a portion of a belt seam region on which the treatment strip is placed; and

a pressure applicator including a pressure wheel having a substantially right cylindrical outer surface, the applicator arranged to force at least the portion of the treatment strip against the portion of the belt seam region.

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31. (NEW) A belt seam treatment apparatus comprising:
a tube with a smooth, adhesive outer surface;
a belt hold system arranged to hold a seam region of a belt against at least a portion of the outer surface of the tube,
wherein the belt hold system includes a bar that extends through a portion of the belt farthest from the tube and selectively pulls the belt against the tube;
an infrared radiation source in optical communication with the at least a portion of the outer surface of the tube against which the seam region of the belt is held; and
a pressure wheel with a substantially concave outer surface substantially corresponding to a curvature of the at least a portion of the outer surface of the tube against which the seam region of the belt is held.